Inspection Report
September 29, 1977

Jackpile-Paguate Minesite
The Anaconda Company
Laguna Tribal Uranium Lease 4
Pueblo of Laguna Indian Reservation
Valencia County, New Mexico

U. S. Geological Survey
Conservation Division
P. O. Box 26124
Albuquerque, New Mexico 87125

Dale C. Jones
Steven D. Argyle
Mining Engineers
October 12, 1977

September 29, 1977, the writer and Steven D. Argyle of the USGS inspected the Anaconda Company's uranium exploration drilling operations on Laguna Tribal Uranium Lease 4. They were accompanied on the inspection by Rudy Forhan, Ernie Wylie, and Ike Peacock of Anaconda. The examination was conducted after Bob Tsiosdia of the Southern Pueblos Agency of the BIA expressed some concern about the drilling activities. According to Mr. Tsiosdia, the close spaced drilling was causing a large amount of surface disturbance, and drilling fluid was being freely discharged on the surface.

Laguna Tribal Uranium Lease 4 occupies approximately 2560 acres in Township 10 North, Range 5 West, near the small Laguna Indian village of Paguate in Valencia County, New Mexico. The lease became effective July 30, 1963, for a term of 10 years, and the surface and mineral rights within the leasehold belong solely to the Pueblo of Laguna. The leased acreage is the site of the Company's producing P-10 and proposed P-15/17 underground uranium mining operations, and the drilling activities are being conducted to more extensively delineate the ore bodies to be extracted by these mining operations. Although the P-10 operations have a formally approved mining plan, permission for the P-15/17 operations is yet to be granted, and neither plan contains provisions for additional surface exploration.

The P-10 and P-15/17 ore deposits were originally outlined using a 100- by 200-foot grid pattern (see attached sketch). The 5-inch boreholes were normally drilled to an average depth of about 600 feet by a Failing 1200 rotary drill rig capable of a maximum depth of 1000 feet. The drill sites were usually 25 by 50 feet (about 0.025 acres), and mica, hulls and mud gel were used to control circulation conditions in the holes. Mud pits were used to contain the drilling medium.

Underground experience has indicated that more extensive delineation of the ore bodies from the surface is necessary, and Anaconda is now closing the original 100 by 200 grid to a 100 by 100 grid. In some areas, it may be necessary to further reduce this pattern to a 50 by 50 or 70 by 70 grid (see attached sketch). The additional boreholes are still rotary drilled 5 inches in diameter with average depths of about 600 feet, but the drilling is now being done with larger Gardner Denver 1400 and 1500 rigs which have the ability to drill to a maximum depth of about 3000 feet. These rigs require drill sites measuring about 50 by 100 feet (0.12 acres, approximately). In addition, two of the three operating rigs are using a foam drilling medium instead of the traditional drilling mud.

At the present time, Anaconda has three rotary drill rigs operating to the west and southwest of the P-10 decline portal. Two of the rigs, a Gardner Denver 1500 and 1400, are drilling on the northeast flank of Black Mesa while a smaller rotary drill rig, similar to the Gardner Denver 1400, is drilling in the vicinity of the P-10 portal. At the time of inspection, the two Gardner Denver rigs on the flank of Black Rim Mesa

were using foam for a circulation medium. No mud pits were being used, and the circulation fluid and drill cuttings were being discharged onto the surface. Several past holes had been drilled using pits, but the majority of the holes evidently have been drilled without pits. Mr. Peacock mentioned that the Company was now starting to dig mud pits at each drill site for the containment of the drilling fluid. The drill rig near the P-10 portal is using the conventional drilling mud which is being contained in circulation pits.

The exploration area had been previously affected by exploration drilling activities, and the recent operations are creating a considerable amount of additional surface disturbance with the preparation of drill sites and access roads. The drill sites are not being reclaimed except for the filling of whatever mud pits are used, and the boreholes are not being plugged.

As a result of the inspection, two immediate problems are known to exist. First, the circulation medium (foam and cuttings) is being freely discharged onto the surface which is contrary to the drilling procedures presently in use on lands in New Mexico under the jurisdiction of the USGS. Although it is highly doubtful that the circulation medium contains any toxic ingredients, the chemical composition of the foaming agent is being verified with the local distributor, Magcobar Drilling Fluids in Grants. The unrestricted discharge of the drilling medium is, however, creating a serious aesthetic impact which could be easily avoided by using mud pits. The pits would not create any hazardous conditions because they would be small in size and very little livestock, if any at all, is present in the area. The writer instructed Mr. Forhan that the use of mud pits for drilling medium containment should be implemented immediately.

The second problem is that the drill sites and access roads are not being reclaimed and the boreholes are not being plugged. This is contrary to the lease provisions, USGS and New Mexico State Engineer requirements, and presently accepted practice. Furthermore, the surface disturbance and associated aesthetic impacts are of much concern to the Pueblo of Laguna and BIA. The writer instructed Mr. Forhan to begin plugging all drill holes immediately.

The subject of drill site restoration is complicated by the fact that Anaconda does not have an approved, or proposed, exploration plan for its Laguna leases. The Company's open-pit mining operations began in 1952, before the enactment of NEPA, and these operations and the exploration drilling have continued until the present without approved plans. All of the Company's past and present underground mining operations have approved or proposed plans, and Anaconda recently submitted a comprehensive mining and reclamation plan for all of its Jackpile-Paguate uranium mining operations until their termination. The comprehensive plan, however, does not contain provisions for exploration activities.

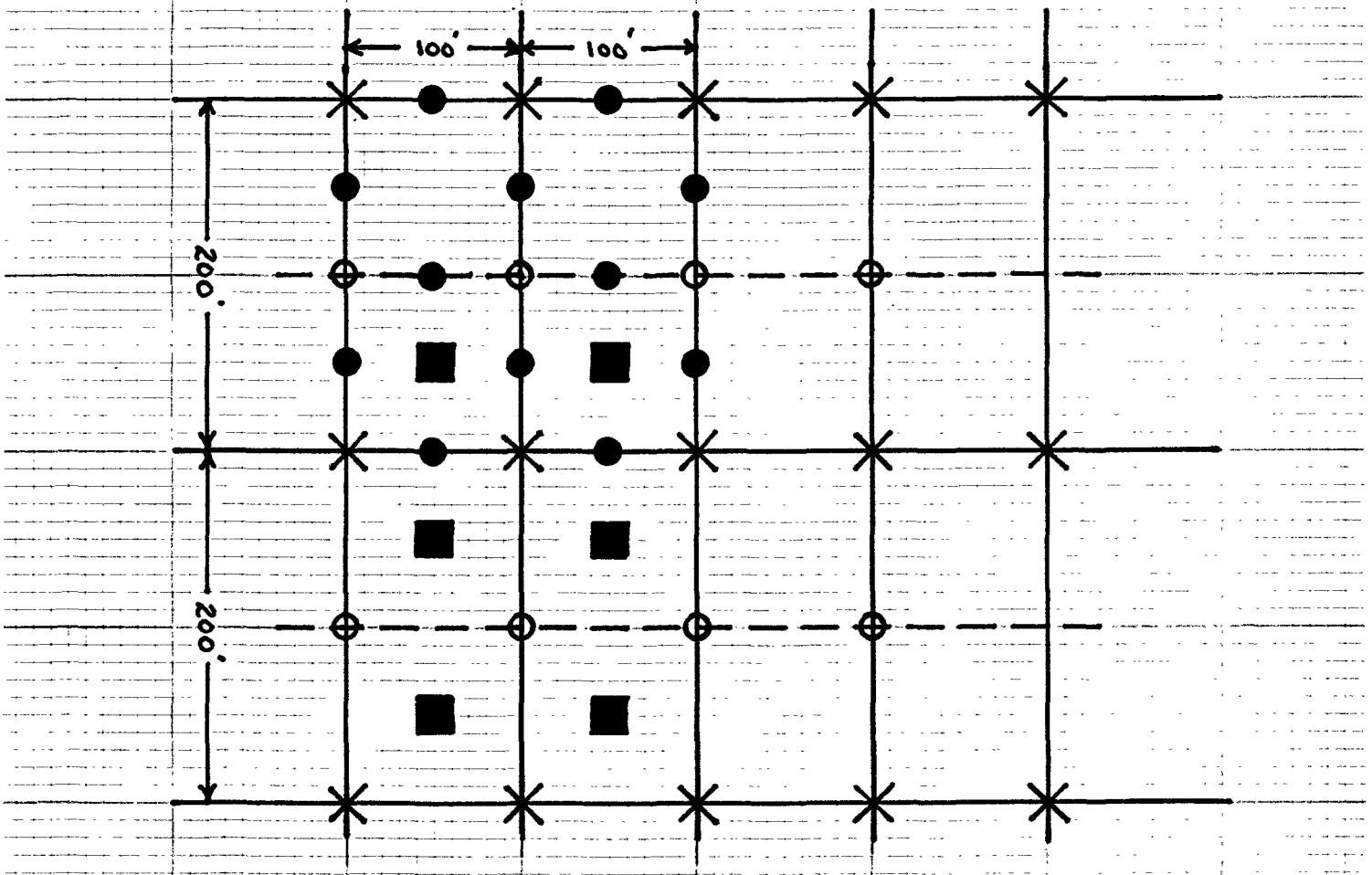
The Area Mining Supervisor is presently on vacation, but upon his return, Anaconda's exploration operations will be thoroughly reviewed in order to ascertain what measures are necessary to bring the operations into compliance with current regulations. The writer feels that postponement of drill site reclamation, until such time as appropriate measures can be derived, will not be detrimental since such reclamation would most likely be delayed until completion of the operations due to the close-spaced grid pattern. This is accepted practice in the drilling programs under USGS jurisdiction in New Mexico.

(ORIG. SGD.) DALE C. JONES

DALE C. JONES
Mining Engineer

Original to: Superintendent, Southern Pueblos Agency, BIA
cc: Governor, Pueblo of Laguna
Chief, Branch of Mining Operations, USGS
Through: Conservation Manager, Central Region, USGS
T. R. Beck, General Manager, The Anaconda Company
Rudy Forhan, Chief Geologist, The Anaconda Company
Files

DCJones:csm



✕ - ORIGINAL BOREHOLES ON 100' x 200' CENTERS

○ - ADDITIONAL BOREHOLES ON 100' x 100' CENTERS

● - ADDITIONAL BOREHOLES ON 50' x 50' CENTERS

■ - POSSIBLE ADDITIONAL BOREHOLES ON 70' CENTERS

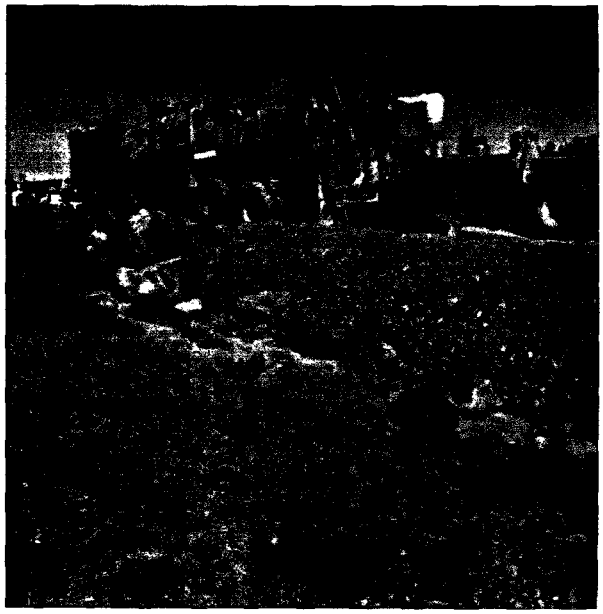
BEE 10x10

Drilling inspection of
9-29-77

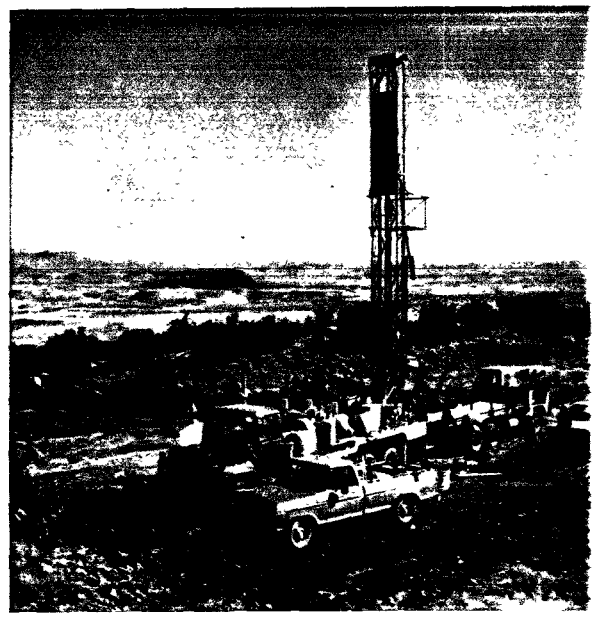
Jones & Argyle

JACKPILE-PAGUATE OPEN-PIT OPERATIONS FROM NE FLANK OF BLACK MESA

NE FLANK OF BLACK MESA

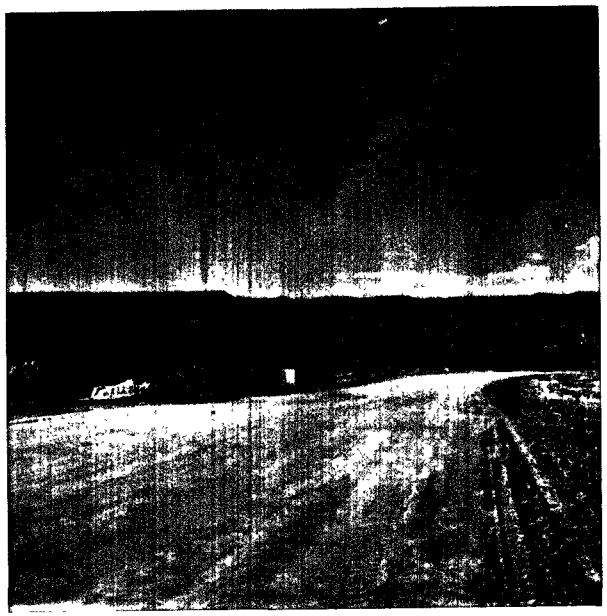


GARDNER DENVER 1500 ROTARY DRILL RIG ON NE FLANK OF BLACK MESA



GARDNER DENVER 1400 ROTA DRILL RIG & SUPPORT EQUIP. O NE. FLANK OF BLACK MESA

NE FLANK OF BLACK MESA



Photos A

Northeast flank of Black Mesa where drilling operations are located.

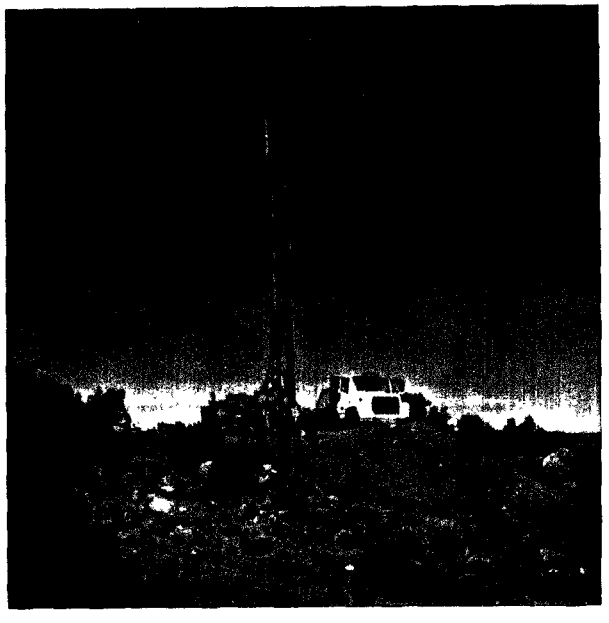


Photo B

Gardner Denver 1500 rotary drill rig and pipe truck on northeast flank of Black Mesa.

Photo C

Gardner Denver 1500 rig (same as in Photo B) showing discharge of circulation medium.

Photo D

Discharge of circulation medium at Gardner Denver 1500 rig (same as in Photos B and C).

Photo E

Discharge of circulation medium at hole collar (same drill rig as in Photos B, C, and D).

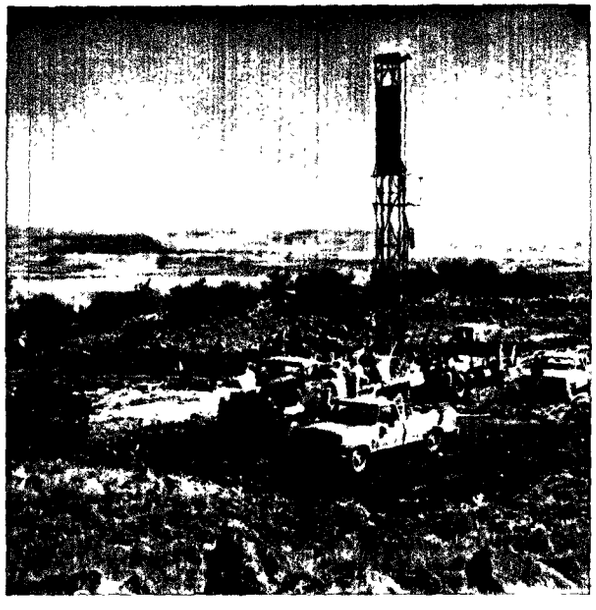


Photo F

Gardner Denver 1400 rotary drill rig and support equipment on northeast flank of Black Mesa. Borehole had just been completed at time of photo; discharge of circulation medium visible to left of rig.

Photo G

Discharge of circulation medium at Gardner Denver 1400 rig (same as in Photo F).

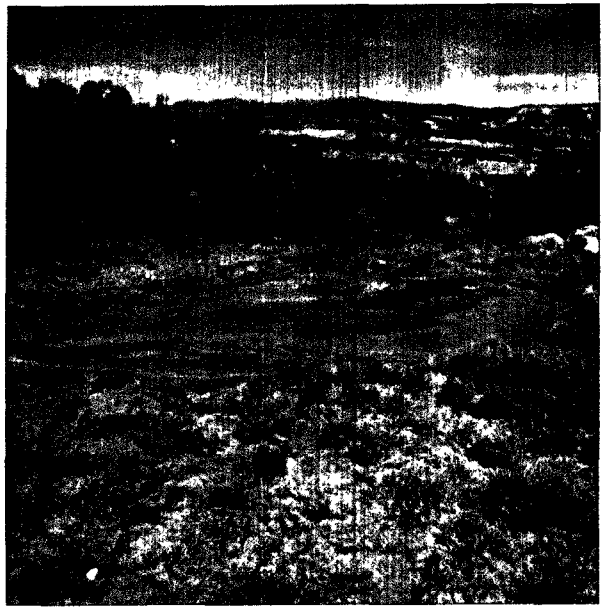


Photo H

Discharge flow of circulation medium at Gardner Denver 1400 rig (same as in Photos F and G).

Photo I

Old drill site above Gardner Denver 1400 rig (Photos F and G) showing revegetation by native species.

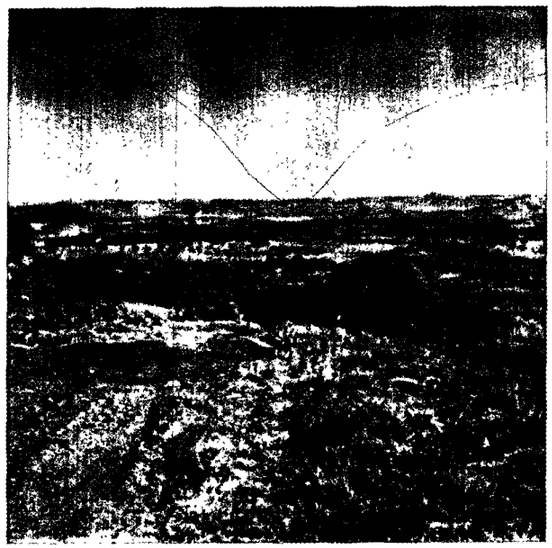


Photo J

Completed borehole which was drilled using mud pits (shown in center of photo).

Carlsbad

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JUL 22 1977
U. S. Geological Surve
Carlsbad, N.M.

Conservation Division
P. O. Box 26124
Albuquerque, New Mexico 87125

July 21, 1977

Memorandum

To: Files

From: Area Mining Supervisor

Subject: Inspection Jackpile--Paguate Mines, The Anaconda Company

On July 13, 1977, I examined the subject mines and attendant reclamation located on the Laguna Indian Reservation.

The inspection was requested by the Technical Committee of the Tribal Council.

The following people made the examination:

John Carrilo	- Technical Committee
Pete Maria	- Technical Committee
Bob Tsiosdia	- Technical Committee
Terry Farmer	- Tribal Lawyer
Bill Gray	- Anaconda Company

Anaconda started a program of grading and planting the tops of the large waste dumps in 1976. However, there are no plans to grade the sides of the waste dumps which are standing at the normal angle of repose. Some minor erosion is taking place on the sides of the dumps, but nothing serious at this time. Some planting will be tried on the sides at a later time.

The adit sites for the PW-2 and PW-3 mines located in the highwall were examined. Backfilling the North Paguate Pit has stopped pending approval of the mine plans and removal of the small amounts of ore involved.

The portal site of the slope which will develop the P15-P17 mine was examined.

All in all, it appears the members of the Technical Committee were satisfied with the reclamation work in progress. The necessity for approving the plans for the PW-2 and PW-3 mines in the near future was explained by the company representative. The small amount of ore

involved must be removed to allow for the final backfilling of the pit and the grading of the highwall in the general area of the mine portals.

(ORIG. SGD.) A. F. CZARNOWSKY

A. F. CZARNOWSKY
Area Mining Supervisor

cc: Carlsbad ✓